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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,732	01/15/2002	Toshiaki Yoshihara	1100.66111	5175

7590 01/10/2005

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EXAMINER

NGUYEN, JENNIFER T

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/047,732

Applicant(s)

YOSHIHARA ET AL.

Examiner

Jennifer T Nguyen

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5,7,9,11-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,7,9,11-14 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office action is responsive to amendment filed 09/02/2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 9, 11-14 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asao et al. (Patent No.: US 6,809,717) in view of Nakao et al. (Pub. No.: US 2004/0041766).

Regarding claim 1, referring to Figs. 12 and 13, Asao teaches a liquid crystal display device, comprising: two substrates (20 and 40) confronting each other; a liquid crystal material having spontaneous polarization sealed between said substrates; pixel electrodes (31) corresponding to liquid crystal cells, provided on an inner face of one of said substrates; switching elements (94) respectively connected to each of said pixel electrodes; and storage capacitors (32) for storing electric charge, respectively connected to each of said pixel electrodes (col. 24, lines 14-65).

Asao differs from claim 1 in that he does not specifically teaches wherein a capacity of capacity of said storage capacitor is greater than or equal to 0.2 times a capacitor of said liquid crystal cell, and less than 5 times said capacity of said liquid crystal cell. However, Nakao teaches a capacity of capacity of said storage capacitor (Cst) is greater than or equal to 0.2 times a capacitor of said liquid crystal cell (C_{lc}), and less than 5 times said capacity of said liquid

Art Unit: 2674

crystal cell (C1c) [0143]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the capacity of said storage capacitor is greater than or equal to 0.2 times a capacitor of said liquid crystal cell, and less than 5 times said capacity of said liquid crystal cell as taught by Nakao in the system of Asao in order to provide a display device with lower driving voltage.

Regarding claims 9 and 11-13, Asao teaches liquid crystal material is a ferroelectrics liquid crystal (col. 1, line 56 to col. 2, line 8).

Regarding claims 14 and 16-19, Asao teaches a back-light having at least one light source (102) (Fig. 15) that emits light of a plurality of colors; and a switching unit (111) (Fig. 18) for switching colors of emitted light of said light source in a time-divided manner in synchronism with the switching of said liquid crystal material of said liquid crystal cell (col. 27, lines 55-61, col. 29, line 20 to col. 30, line 10 and col. 40, lines 24-51).

Regarding claim 20, Asao teaches color filters for displaying colors (col. 23, lines 10-14).

4. Claims 3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asao et al. (Patent No.: US 6,809,717) in view of Nakao et al. (Pub. No.: US 2004/0041766) and further in view of Hagiwara et al. (U.S. Patent No. 5,130,050).

Regarding claims 3, 5 and 7, the combination of Asao and Nakao differs from claims 3, 5 and 7 in that it does not specifically teach data writing time on said liquid crystal cell and said storage capacitor through said switching element is set so that amount of transmitted light due to the switching of said liquid crystal material determined by image data during off state of said switching element does not substantially change and data writing time is not more than 5 microseconds. However, Hagiwara teaches data writing time on said liquid crystal cell and said

Art Unit: 2674

storage capacitor through said switching element is set so that amount of transmitted light due to the switching of said liquid crystal material determined by image data during off state of said switching element does not substantially change and data writing time is few microseconds to 10 microseconds (col. 1, lines 4-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the data writing time as taught by Hagiwara in the system of Kurematsu in order to achieve stabilized for display.

5. Applicant's arguments with respect to claims 1, 3, 5, 7, 9, 11-14 and 16-20 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2674

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Nguyen whose telephone number is 703-305-3225. The examiner can normally be reached on MON-THU from 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reached on **703-305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks


Washington, D.C. 20231

or faxed to: (703) 872-9306 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

JNguyen
January 3, 2005


REGINA LIANG
PRIMARY EXAMINER